

## **DETAILED ACTION**

### ***Status of Claims***

1. Claims 1-4 and 6-30, filed January 21<sup>st</sup>, 2010, are currently under examination.

Claim 5 is canceled and claims 19-30 are withdrawn.

### ***Examiner's Amendment***

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ms. Pooja A. Van Dyck on April 23rd, 2010.

### ***Start of Claim Amendments***

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1. (Currently Amended) A method of manufacturing molten iron, comprising:  
producing reducing material of mixed hot fine direct reduced iron and calcined additives, the reducing material being produced from multiple fluidized beds;  
charging the reducing material to at least one pair of roller presses;  
roll pressing the reducing material through the at least one pair of roller presses to produce continuous compacted material having lumped portions adjacent to each other and concave grooves formed between the lumped portions on pressed surfaces;  
crushing the compacted material to have irregular shapes;

subsequently charging the crushed compacted material with irregular shapes to a coal packed bed; and

supplying oxygen to the coal packed bed to manufacture molten iron,  
wherein the lumped portions are continuously formed on the pressed surfaces along an axial direction of the at least one pair of roller presses,

wherein the pressed surfaces comprise first and second pressed surfaces opposing each other and the lumped portions comprise first and second lumped portions formed on the first and second surfaces, respectively, and,

wherein, when viewed from a direction perpendicular to a plane centered between the first pressed surface and the second pressed surface:

(i) the first and second lumped portions partially overlap each other; and  
(ii) the concave grooves are unaligned on the opposing first and second pressed surfaces

9. (Currently Amended) A method for manufacturing molten iron, comprising:

producing hot fine direct reduced iron from fluidized beds;  
charging the fine direct reduced iron to at least one pair of roller presses;  
roll pressing the fine direct[[ed]] reduced iron through the at least one pair of roller presses to produce continuous compacted material having lumped portions adjacent to each other and concave grooves formed between the lumped portions on pressed surfaces;

crushing the compacted material to have irregular shapes;

subsequently charging the crushed compacted material with irregular shapes to a coal packed bed; and

supplying oxygen to the coal packed bed to manufacture molten iron,  
wherein the lumped portions are continuously formed on the pressed surfaces along an axial direction of the at least one pair of roller presses,

wherein the pressed surfaces comprise first and second pressed surfaces opposing each other and the lumped portions comprise first and second lumped surfaces formed on the first and second surfaces, respectively, and

wherein, when viewed from a direction perpendicular to a plane centered between the first pressed surface and the second pressed surface:

(i) the first and second lumped portions partially overlap each other; and  
(ii) the concave grooves are unaligned on the opposing first and second pressed surfaces

19 – 30. (Canceled)

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*End of Claim Amendments*

***Allowable Subject Matter***

3. Claims 1-4 and 6-18 are allowed.

***Reasons for Allowance***

4. The following is an examiner's statement of reasons for allowance:

The closest prior art of Joo (US 6,277,324), Hofmann (US 3,897,183), and Fayed (Rolling Pressing...) discloses a method for manufacturing molten iron including roll pressing reducing material, including Hofmann's disclosure of overlapping lumped portion when view from a side profile parallel the axis of the roll presses (Figure 4 of Hofmann).

However Hofmann does not disclose that the lumped portions overlap when viewed from a direction perpendicular to a plane centered between the first pressed surface and the second pressed surface (compare Figure 3 of Hofmann to Figure 3 of the instant specification as shown on p. 11 of Applicants' remarks filed January 21<sup>st</sup>, 2010).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark L. Shevin whose telephone number is (571) 270-3588 and fax number is (571) 270-4588. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy M. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

***/Mark L. Shevin/***  
Examiner, Art Unit 1793

***/ Roy King/***  
Supervisory Patent Examiner, Art Unit 1793

Application/Control Number: 10/539,743  
Art Unit: 1793

Page 6

10-539,743  
April 12<sup>th</sup>, 2010